(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number : **0 447 167 B1**

(12) # EUROPEAN PATENT SPECIFICATION

(45) Date of publication of patent specification : **22.11.95 Bulletin 95/47**

(51) Int. Cl.^{6} : **H04N 5/44**

(21) Application number : **91302034.3**

(22) Date of filing : **12.03.91**

(54) **Image display device.**

(30) Priority : **13.03.90 JP 59969/90**

(43) Date of publication of application : **18.09.91 Bulletin 91/38**

(45) Publication of the grant of the patent : **22.11.95 Bulletin 95/47**

(84) Designated Contracting States : **DE FR GB**

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Description

This invention relates to an image display device such as a television image receiver including display means of a wide aspect ratio screen. Either inputted video signals of wide aspect ratio or inputted video signals of standard aspect ratio are picture quality adjusted by picture quality adjustment means and displayed on the wide aspect ratio screen.

Hitherto, image display devices, e.g., television image receivers for displaying an image by a video signal with display means such as a cathode ray tube (CRT) or a liquid crystal display have been widely known. In such image display devices, a technique is employed to implement picture quality adjustment processing such as a sharpness adjustment or a contrast adjustment to a video signal, thereby making it possible to provide a display image excellent in the picture quality by using display means such as the above-mentioned CRT or the like.

Meanwhile, in the existing television broadcasting, the lateral-to-longitudinal ratio (aspect ratio) of the display screen is set to 4:3. However, in an EDTV (extended definition TV) broadcasting of the second generation which will be put into practice in the future, a high definition television broadcasting such as a high vision or the like, planning is made to widen the aspect ratio of the screen so that it is equal to 16:9.

Accordingly, it is foreseen in the future that the television broadcasting of the wide aspect ratio of 16:9 will be conducted in addition to the existing television broadcasting of the standard aspect ratio of 4:3. For this reason, image display devices capable of display images of both video signals are being developed at present.

In such image display devices, as the system in which e.g., display means of the wide aspect ratio of 16:9 is used to display an image of a video signal of the standard aspect ratio of 4:3, the following systems have been proposed.

The first system is, as disclosed for example in EP-A-0326339 and WO-A-8605644 and shown in FIG 1A, the system called a standard mode to implement a processing such that a picture P_1 of a video signal of the standard aspect ratio falls within the wide aspect ratio screen to mask both left and right side regions P_2 and P_3. In this standard mode, a video signal of the standard aspect ratio is subjected to time base compression so that it is reduced to 3/4 in a horizontal direction in correspondence with a difference of the aspect ratio with respect to a display picture of the wide aspect ratio to add in the both left and right side regions of that video signal, mask signals displayed, e.g., by black, thus to effect display in accordance with deflection of the same raster scanner as in the ordinary case.

Further, the second system is, as shown in FIG. 1B, is the system called a top and bottom cut mode in which respective top and bottom regions P_4 and P_5 of an image of a video signal of the standard aspect ratio are cut, but the image P_6 is displayed on the entire region of the display screen. In the case of the top and bottom cut mode, over scan is applied to deflection in upper and lower directions without processing the video signal of the standard aspect ratio to effect display.

US-A-4958229 discloses a similar system particularly adapted to display film-originating images on a TV screen in which the image is stretched by time base adjustment to fill the screen.

However, even though the above allows an image of the standard aspect ratio to be displayed on the wide aspect ratio screen using the standard mode or top and bottom cut mode, although an image of an input video signal of the wide aspect ratio is satisfactorily displayed, the picture quality of other images may be disadvantageously degraded as described below.

Namely, in order to display an image by a video signal of the standard aspect ratio on the wide aspect ratio screen in the standard mode as shown in FIG. 1A, it is necessary to implement time base processing to compress the time base of a video signal so that it is reduced to 3/4 in a horizontal direction. A display image in the standard mode is such that the frequency component of a video signal is 4/3 times larger than the original one by the time base processing, resulting in insufficient sharpness of picture.

When it is assumed that an image by a video signal of the standard aspect ratio is displayed on the wide aspect ratio screen in the top and bottom cut mode as shown in FIG. 1B, the number of effective scanning lines serving as a display picture changes from 480 to 360. For this reason, the luminance of the picture is reduced to 3/4, resulting in dark picture.

US-A-3688028 discloses a system to allow a CRT to display computer-generated animated pictures in which the beam intensity is adjusted based on the absolute size of the image to be displayed or the spot scanning speed.

According to the present invention there is provided an image display device for displaying a television signal in plural formats comprising;

first receiving means for receiving a first television signal of standard aspect ratio,

second receiving means for receiving a second television signal of wide aspect ratio,

detecting means for detecting the format of the received television signals,

display means having a screen of wide aspect ratio for displaying an image in dependency upon the received television signal, characterised by

picture quality adjustment means including sharpness adjustment means for adjusting the sharpness of the displayed image in dependency upon the format of received television signal.

Thus with the present invention it is possible to

provide an image display device including picture quality adjustment means adapted so that a switched one of an input video signal of the standard aspect ratio and an input video signal of the wide aspect ratio is inputted thereto, and display means of a wide aspect ratio for displaying an image of a video signal to which picture quality adjustment is implemented by the picture quality adjustment means, wherein a technique is employed to implement suitable picture quality adjustment processing to a video signal, thereby making it possible to display images of respective aspect ratios under the state of a satisfactory picture quality.

In the image display device according to this invention, sharpness adjustment processing of a characteristic corresponding to an aspect ratio of an image displayed on the wide aspect ratio screen of the display means is implemented to an input video signal by the sharpness adjustment means provided in the picture quality adjustment means e.g. to allow an emphasis frequency band of an input video signal of the wide aspect ratio to be higher than a frequency band of an input video signal of the standard aspect ratio to thereby make it possible to render the characteristic of an optimum sharpness adjustment to images of the standard aspect ratio and the wide aspect ratio, thus to permit the picture qualities of respective display images to be optimum.

Further, in the image display device according to this invention, time base compression processing may be implemented to an input video signal of the standard aspect ratio by the time base compression processing means, thereby making it possible to carry out an image display in the standard mode on the wide aspect ratio screen of the display means. In addition, sharpness adjustment processing of a characteristic corresponding to a compression ratio in the time base compression processing means may be implemented to an input video signal of the standard aspect ratio to which the time base compression processing has been implemented by the sharpness adjustment means provided in the picture quality adjustment means, thus making it possible to compensate insufficiency in sharpness resulting from the time base compression processing in the standard mode, and to carry out an image display having a satisfactory picture quality in the standard mode on the wide aspect ratio screen of the display means.

Furthermore, in the image display device according to this invention, not only an image display in the standard mode can be carried out on the wide aspect ratio screen of the display means, but also an image display in the top and bottom mode on the wide aspect ratio screen by switching quantity of scanning in a vertical direction of the display means by using the scanning control means. In addition, in the top and bottom cut mode, by using contrast adjustment means provided in the picture quality adjustment means to implement, to an input video signal, contrast adjustment processing of a characteristic corresponding to a quantity of scanning in a vertical direction of the display means by the scanning control means, it is possible to compensate lowering of luminance due to changes in the quantity of scanning in a vertical direction of the display means, and to carry out an image display having a satisfactory picture quality in the top and bottom cut mode on the wide aspect ratio screen of the display means.

For this reason, even in the case where an image of a video signal of the standard aspect ratio is displayed on a mode provided, e.g., by switching between the standard mode and the top and bottom cut mode, this image display device can provide an optimum sharpness characteristic or contrast characteristic in respective modes. In addition, if respective images are switched each other and displayed, there results small difference in the picture quality, leading to no possibility that a sense of incompatibility is rendered to a viewer.

The aforementioned and other objects, features and advantages of the present invention will become clear from the following description of the preferred embodiments thereof, taken in conjunction with the accompanying drawings, in which:-

FIGS. 1A and 1B are model views showing the case where an image of the standard aspect ratio is displayed on the wide aspect ratio, respectively, wherein FIG. 1A shows a display image in the side mask mode, FIG. 1B shows a display image in the top and bottom cut mode.

FIG. 2 is a block diagram showing the configuration of an image display device according to this invention, FIG. 3 is a block diagram showing the configuration of the picture quality adjustment circuit of the above-mentioned image display device, and FIG. 4 is a frequency characteristic diagram showing a frequency characteristic given to an input video signal by the sharpness processing of the picture quality adjustment circuit.

An embodiment of this invention will now be described with reference to the attached drawings.

FIG. 2 is a block diagram of an image display device (1) of this embodiment.

This image display device (1) includes an image receiving tube (2) having a screen of a wide aspect ratio of 16:9, and serves to display, on the wide aspect ratio screen of the image receiving tube (2), respective broadcasting images received by a broadcasting satellite tuner (4) or a ground wave tuner (5) in accordance with an instruction from a user by a remote controller (3) or the like. In the image display device (1), selection of video signals of the above-mentioned broadcasts, the operating controls of respective sections corresponding thereto, the picture quality adjustment processing control, the deflection angle control of the image receiving tube (2), and the like

are carried out by a system controller (6) in accordance with an instruction from the user.

Initially, explanation will be given in connection with the case where user instructs an audio-visual operation of a broadcasting based on the existing NTSC system of the standard aspect ratio of 4:3.

In this case, by a control by the system controller (6) in conformity with an instruction from the user, a video signal of a desired channel is received by the ground wave tuner (5), and is delivered to a frame double speed conversion circuit (8) through a switching circuit (7). Further, in the case of receiving a broadcasting of the NTSC system delivered from a satellite, by the control by the system controller (6), a video signal of a desired channel is received by the broadcasting satellite tuner (4), and is delivered to the frame double speed conversion circuit (8) through the switching circuit (7).

This frame double speed conversion circuit (8) converts the scanning system of the video signal of the NTSC system delivered through the switching circuit (7) from the interlace scanning to the sequential scanning by the frame double speed conversion to output the video signal based on the sequential scanning. In this embodiment, by implementing, to a video signal, various picture quality improvement processing proposed in the IDTV system, etc. at the frame double speed conversion circuit (8) in addition to the above-mentioned frame double speed conversion, the picture quality of the NTSC video signal is improved.

A video signal outputted from the frame double speed conversion circuit (8) is delivered to a time base compression circuit (9), at which the time base in a horizontal direction is compressed into a time base 3/4 times larger than that so that an image displayed on the wide aspect ratio screen of the image receiving tube (2) different in the aspect ratio is not distorted. In the case where a user selects an image display state in the standard mode, a video signal to which the time base compression processing is implemented at the time base compression circuit (9) is delivered to a picture quality adjustment circuit (20) through respective switching circuits (10) and (11) by the control by the system controller (6). Further, in the case where the user selects an image display state in the top and bottom cut mode, a video signal outputted from the frame double speed conversion circuit (8) is delivered to the picture quality adjustment circuit (20) through the respective switching circuits (10) and (11) as it is.

On the other hand, in the case where a user instructs an audio-visual operation of a high vision broadcasting from a satellite, by the control by the system controller (6), a MUSE signal received by the broadcasting satellite tuner (4) is decoded at a MUSE decoder (12), and is delivered to the picture quality adjustment circuit (20) through the switching circuit (11).

FIG. 3 is a block diagram showing the configuration of the picture quality adjustment circuit (20).

The picture quality adjustment circuit (20) is adapted to implement signal processing for adjustment of picture quality to an input video signal separated into a luminance signal Y and respective color signals P_B and P_R of B-Y and R-Y and delivered thereto at respective level conversion circuits (21B), (21R), (22Y), (22B) and (22R) and respective characteristic conversion circuits (23A) and (23B) in accordance with the control by the system controller (6) to output the video signal thus processed.

The above-mentioned level conversion circuits (21B) and (21R) suitably control color levels of the color signal P_B and P_R in accordance with control signals delivered from the system controller (6) through a digital/analog (D/A) conversion circuit (13), respectively, to thereby adjust color density or color tone of an image displayed on the image receiving tube (2).

Further, the level conversion circuits (22Y), (22B) and (22R) suitably control contrast levels of the respective signals Y, P_B and P_R in accordance with control signals respectively delivered from the system controller (6) through a digital-to-analog (D/A) conversion circuit (14), respectively, to thereby adjust a contrast (picture) of an image displayed on the screen of the image receiving tube (2).

Further, the characteristic conversion circuits (23A) and (23B) control the frequency characteristics of the low frequency band component and the high frequency band component of the luminance signal Y in accordance with control signals delivered from the system controller (6), respectively, to thereby adjust sharpness of an image displayed on the wide aspect ratio screen of the image receiving tube (2).

The luminance signal Y and the respective color signals P_B and P_R to which signal processing for adjustment of picture quality is implemented at the respective level conversion circuits (21B), (21R), (22Y), (22B) and (22R) and the respective characteristic conversion circuits (23A) and (23B) are outputted from the picture quality adjustment circuit (20) and delivered to a matrix circuit (15), at which they are converted to video signals of the three primary colors R, G and B. Thereafter, these video signals thus obtained are delivered to the image receiving tube (2) through respective drivers (16R), (16G) and (16B), and are displayed on the wide aspect ratio screen of the image receiving tube (2).

Further, the deflection system of the image receiving tube (2) is driven by the deflection circuit (17) controlled by the system controller (6), and the deflection angle of the image receiving tube (2), or the like is controlled in dependency upon the aspect ratio of an image displayed on the screen.

In such an image display device (1), by the control by the system controller (6), in dependency upon

the kind of images displayed on the wide aspect screen of the image receiving tube (2), the contents of the contrast adjustment and the sharpness adjustment implemented to a video signal at the picture quality adjustment circuit (20) are altered as follows.

Namely, in the case of displaying an image of high vision of the wide aspect ratio on the wide aspect ratio screen of the image receiving tube (2), the level conversion circuits (22Y), (22B) and (22R) for adjustment of contrast constituting the picture quality adjustment circuit (20) are set so that they have predetermined standard levels (100%), respectively. Further, the characteristics conversion circuit (23B) for the high frequency band component of the respective characteristic conversion circuits (23A) and (23B) for adjustment of sharpness is placed in an operating state. Thus, as indicated by the characteristic curve A in FIG. 4, a frequency characteristic to lay emphasis (160%) over a broad band up to the high frequency band component is given to the luminance signal Y delivered to the picture quality adjustment circuit (20). For this reason, in this case, an image like that in high vision of high resolution satisfactory up to the details can be displayed on the wide aspect ratio screen of the image receiving tube 2.

Further, in the case of displaying an image of the NTSC system of the standard aspect ratio on the wide aspect ratio screen of the image receiving tube (2), respective level conversion circuits (22Y), (22B) and (22R) for adjustment of contrast constituting the picture quality adjustment circuit (20) are set to have standard levels (100%), respectively. Further, respective characteristic conversion circuits (23A) and (23B) for adjustment of sharpness are both placed in an operating state. Thus, as indicated by the characteristic curve B in FIG. 4, a frequency characteristic to emphasize the high frequency component to some extent (140%) is given to the luminance signal Y delivered to the picture quality adjustment circuit (20). For this reason, in this case, sharpness degraded as the result of the fact that time base of a video signal is compressed at the time base compression circuit (9) is compensated. Thus, an image of an optimum sharpness can be displayed on the wide aspect ratio screen of the image receiving tube (2).

Furthermore, in the case of displaying an image of the NTSC system of the standard aspect ratio on the wide aspect ratio screen of the image receiving tube in the top and bottom mode, level conversion circuits (22Y), (22B) and (22R) for adjustment of contrast constituting the picture quality adjustment circuit (20) are set to have high level (140%), respectively. Thus, the contrasts of the respective color signals P_B and P_R delivered to the picture quality adjustment circuit (20) are emphasized. Further, in this case, the characteristic conversion circuit (23A) for the low frequency band component of the respective characteristic conversion circuits (23A) and (23b) for adjustment of sharpness is placed in an operating state. As indicated by the characteristic curve C in FIG. 4, a frequency characteristic to emphasize (100%) an ordinary signal band of the NTSC system is given to the luminance signal Y delivered to the picture quality adjustment circuit (20). Accordingly, since an original image is displayed on the screen of the image receiving tube (2) having a different aspect ratio with the upper and lower parts thereof being cut, a decreased luminance is compensated. Thus, an image of an optimum luminance can be displayed on the wide aspect ratio screen of the image receiving tube (2).

In a manner stated above, this image display device (1) suitably changes the content of the picture quality adjustment processing applied to a video signal at the picture quality adjustment circuit (20) in dependency upon the kind of images displayed on the wide aspect ratio screen of the image receiving tube (2). For this reason, it is possible to implement optimum picture quality adjustment processing to respective video signals adapted for an image of the vision of the wide aspect ratio displayed on a screen of the wide aspect ratio of the image receiving tube (2), an image of the standard aspect ratio based on the standard mode, and an image of the wide aspect ratio based on the top and bottom cut mode from a video signal of the standard aspect ratio thereafter to display such images on the wide aspect ratio screen of the image receiving tube (2). Thus, the picture qualities of images can be optimized. Further, since the picture qualities of respective images can be optimized in this way, even if switching between images mentioned above is made to display a switched one on the wide aspect ratio screen of the image receiving tube 2, there results small difference between picture qualities, leading to no possibility that a sense of incompatibility is rendered to a viewer.

Claims

1. An image display device for displaying a television signal in plural formats comprising:

   first receiving means (4,5) for receiving a first television signal of standard aspect ratio,

   second receiving means (4,5) for receiving a second television signal of wide aspect ratio,

   detecting means (6) for detecting the format of the received television signals,

   display means (2) having a screen of wide aspect ratio for displaying an image in dependency upon the received television signal, characterised by

   picture quality adjustment means (20) including sharpness adjustment means (23A,23B) for adjusting the sharpness of the displayed image in dependency upon the format of received television signal.

2. An image display device according to claim 1, which further comprises time base compression processing means (9) for implementing time base compression processing on said first television signal of standard aspect ratio, and

wherein said sharpness adjustment means (23A,23B) is such that an emphasis frequency band of said first television signal is altered in dependency upon a compression ratio in said time base compression processing means (9).

3. An image display device according to claim 2,

wherein said time base compression processing means (9) is adapted to implement time base compression processing on said first television signal in a horizontal direction.

4. An image display device according to claim 1, 2 or 3, further comprising means for

displaying said first television signal on said screen (2) as first mode, said first mode having display patterns of a display area (P1) for image signals and non display area (P2,P3) for a masking signal, said non display area (P2,P3) is an area which is created by the difference between said standard aspect ratio and said wide aspect ratio.

5. An image display device according to claim 1, 2, 3 or 4 further comprising,

scanning control means (6,17) for changing a quantity of scanning in a vertical direction of said display means (2), and

wherein the contrast characteristic of contrast adjustment means (22R,22B,22Y) is altered in dependency upon the quantity of scanning.

6. An image display device according to claim 5, further comprising means for

displaying said first television signal on said screen as second mode, said second mode generating a display signal being scanned visibly in a display area (P6) on said screen and non display signal being scanned in portions (P4,P5) above and below the visible screen area.

7. An image display device according to claim 5 or 6,

wherein said contrast adjustment means (22R,22B,22Y) is adapted to adjust in second mode in such a manner that level of the contrast of said first television signal is higher than that of said second television signal.

8. An image display device according to any one of the preceding claims,

wherein said standard aspect ratio is equal to 4:3 and said wide aspect ratio is equal to 16:9.

9. An image display according to any one of the preceding claims,

wherein said first television signal is based on NTSC television format and said second television signal is based on MUSE television format.

10. An image display device according to any one of claims 1 to 9 wherein said first television signal is based on the PAL television format.

Patentansprüche

1. Bildanzeigevorrichtung zur Anzeige eines Fernsehsignals in mehreren Formaten, bestehend aus:
eine erste Empfangseinrichtung (4, 5) zum Empfang eines ersten Fernsehsignals eines Standardseitenverhältnisses,
einer zweiten Empfangseinrichtung (4, 5) zum Empfang eines zweiten Fernsehsignals eines großen Seitenverhältnisses,
einer Detektoreinrichtung zum Detektieren des Formats des empfangenen Fernsehsignals,
einer Anzeigeeinrichtung (2) mit einem Schirm eines großen Seitenverhältnisses zur Anzeige eines Bildes in Abhängigkeit des empfangenen Fernsehsignals,
gekennzeichnet durch
eine Bildqualität-Einstelleinrichtung (20) mit einer Schärfeeinstelleinrichtung (23A, 23B) zum Einstellen der Schärfe des angezeigten Bildes in Abhängigkeit vom Format des empfangenen Fernsehsignals.

2. Bildanzeigevorrichtung nach Anspruch 1, mit einer Zeitbasiskompressions-Bearbeitungseinrichtung (9) zum Durchführen einer Zeitbasiskompressionsbearbeitung am ersten Fernsehsignal des Standardseitenverhältnisses, wobei
die Schärfeeinstelleinrichtung (23A, 23B) derart ausgebildet ist, daß ein Hervorhebungsfrequenzband des ersten Fernsehsignals in Abhängigkeit von einem Kompressionsverhältnis in der Zeitbasiskompressions-Bearbeitungseinrichtu ng (9) geändert wird.

3. Bildanzeigevorrichtung nach Anspruch 2, wobei die Zeitbasiskompressions-Bearbeitungseinrichtung (9) so ausgebildet ist, daß sie die Zeitbasiskompressionsbearbeitung am ersten Fernsehsignal in horizontaler Richtung durchführt.

4. Bildanzeigevorrichtung nach Anspruch 1, 2 oder

3, mit
einer Einrichtung zum Anzeigen des ersten Fernsehsignals auf dem Schirm (2) als ein erster Modus, der Anzeigemuster eines Anzeigebereichs (P1) für Bildsignale und eines Nichtanzeigebereichs (P2, P3) für ein Maskierungssignal aufweist, wobei der Nichtanzeigebereich (P2, P3) ein Bereich ist, der durch die Differenz zwischen dem Standardseitenverhältnis und dem großen Seitenverhältnis erzeugt ist.

5. Bildanzeigevorrichtung nach Anspruch 1, 2, 3 oder 4, mit
einer Abtaststeuereinrichtung (6, 17) zur Änderung einer Abtastquantität in vertikaler Richtung der Anzeigeeinrichtung (2), wobei
die Kontrastcharakteristik einer Kontrasteinstelleinrichtung (22R, 22B, 22Y) in Abhängigkeit von der Abtastquantität geändert wird.

6. Bildanzeigevorrichtung nach Anspruch 5, mit
einer Einrichtung zum Anzeigen des ersten Fernsehsignals auf dem Schirm als ein zweiter Modus, der ein in einem Anzeigebereich (P6) auf dem Schirm sichtbar abgetastetes Anzeigesignal und ein in Abschnitten (P4, P5) über und unter dem sichtbaren Schirmbereich abgetastetes Nichtanzeigesignal erzeugt

7. Bildanzeigevorrichtung nach Anspruch 5 oder 6, wobei
die Kontrasteinstelleinrichtung (22R. 22B, 22Y) so ausgebildet ist, daß sie im zweiten Modus derart einstellt, daß der Pegel des Kontrasts des ersten Fernsehsignals höher als der des zweiten Fernsehsignals ist.

8. Bildanzeigevorrichtung nach einem der vorhergehenden Ansprüche, wobei
das Standardseitenverhältnis gleich 4:3 und das große Seitenverhältnis gleich 16:9 ist.

9. Bildanzeigevorrichtung nach einem der vorhergehenden Ansprüche, wobei
das erste Fernsehsignal auf dem NTSC-Fernsehformat und das zweite Fernsehsignal auf dem MUSE-Fernsehformat basiert.

10. Bildanzeigevorrichtung nach einem der Ansprüche 1 bis 9,
wobei das erste Fernsehsignal auf dem PAL-Fernsehformat basiert.

Revendications

1. Dispositif d'affichage d'image pour afficher un signal de télévision dans plusieurs formats comprenant :
un premier dispositif de réception (4, 5) pour recevoir un premier signal de télévision d'un format d'image standard,
un second dispositif de réception (4, 5) pour recevoir un second signal de télévision de format d'image large,
un dispositif de détection (6) pour détecter le format des signaux de télévision reçus,
un dispositif d'affichage (2) ayant un écran de format d'image large pour afficher une image en fonction du signal de télévision reçu, caractérisé par
un dispositif de réglage de qualité d'image (20) comprenant un dispositif de réglage de netteté (23A, 23B) pour régler la netteté de l'image affichée en fonction du format du signal de télévision reçu.

2. Dispositif d'affichage d'image selon la revendication 1, qui comprend en outre un dispositif de traitement de compression de base de temps (9) pour effectuer un traitement de compression de base de temps dudit premier signal de télévision de format d'image standard, et
dans lequel ledit dispositif de réglage de netteté (23A, 23B) est tel qu'une bande de fréquence accentuée dudit premier signal de télévision est altérée en fonction du taux de compression dans ledit dispositif de traitement de compression de base de temps (9).

3. Dispositif d'affichage d'image selon la revendication 2, dans lequel ledit dispositif de traitement de compression de base de temps (9) est adapté pour effectuer un traitement de compression de base de temps dudit premier signal de télévision dans une direction horizontale.

4. Dispositif d'affichage d'image selon la revendication 1, 2, ou 3, comprenant en outre un dispositif pour
afficher ledit premier signal de télévision sur ledit écran (2) comme premier mode, ledit premier mode ayant des modèles d'affichage d'une zone d'affichage (P1) pour des signaux d'image et une zone de non-affichage (P2, P3) pour un signal de masquage, ladite zone de non-affichage (P2, P3) est une zone qui est créée par la différence entre ledit format d'image standard et ledit format d'image large.

5. Dispositif d'affichage d'image selon la revendication 1, 2, 3 ou 4 comprenant en outre,
un dispositif de commande de balayage (6, 17) pour changer une quantité de balayage dans une direction verticale dudit dispositif d'af-

fichage (2), et

dans lequel la caractéristique de contraste du dispositif de réglage de contraste (22R, 22B, 22Y) est altérée en fonction de la quantité de balayage.

6. Dispositif d'affichage d'image selon la revendication 5, comprenant en outre un dispositif pour afficher ledit premier signal de télévision sur ledit écran comme second mode, ledit second mode générant un signal d'affichage balayé de façon visible dans une zone d'affichage (P6) sur ledit écran et un signal de non-affichage balayé dans des parties (P4, P5) au-dessus et au-dessous d'une zone d'écran visible.

7. Dispositif d'affichage d'image selon la revendication 5 ou 6, dans lequel ledit dispositif de réglage de contraste (22R, 22B, 22Y) est adapté pour effectuer un réglage dans le second mode de telle manière que le niveau de contraste dudit premier signal de télévision est plus élevé que celui dudit second signal de télévision.

8. Dispositif d'affichage d'image selon l'une quelconque des revendications précédentes, dans lequel ledit format d'image standard est égal à 4:3 et ledit format d'image large est égal à 16:9.

9. Dispositif d'affichage d'image selon l'une quelconque des revendications précédentes, dans lequel ledit premier signal de télévision est basé sur le format de télévision NTSC et ledit second signal de télévision est basé sur un format de télévision MUSE.

10. Dispositif d'affichage d'image selon l'une quelconque des revendications 1 à 9 dans lequel ledit premier signal de télévision est basé sur le format de télévision PAL.

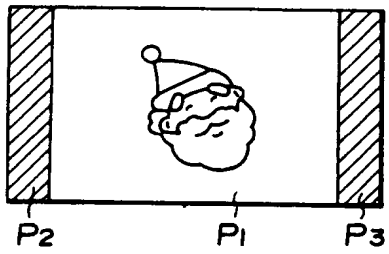

FIG.1A

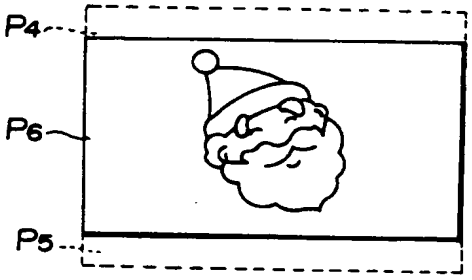

FIG.1B

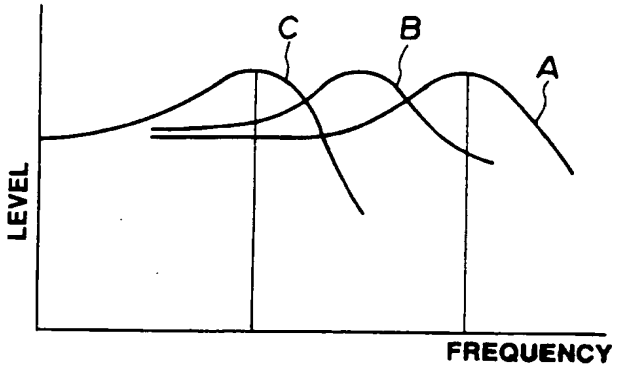

FIG.4

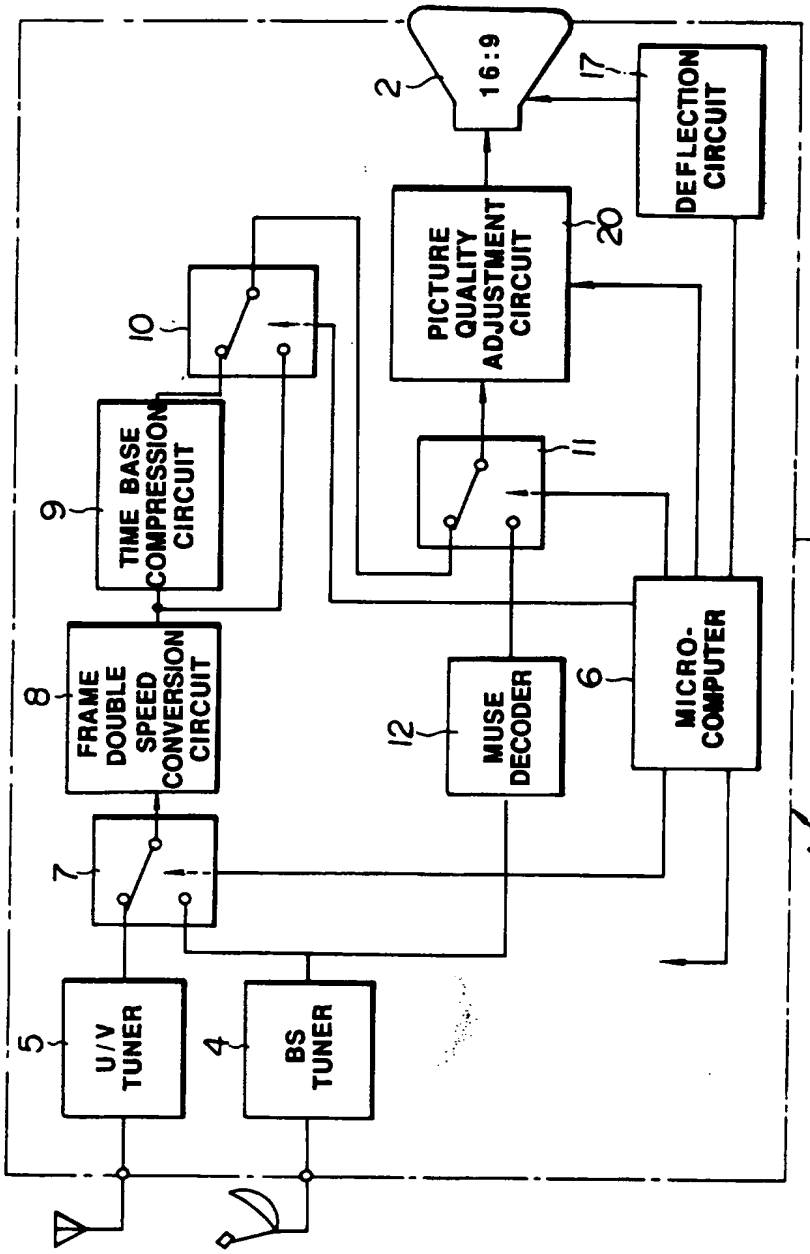

FIG.2

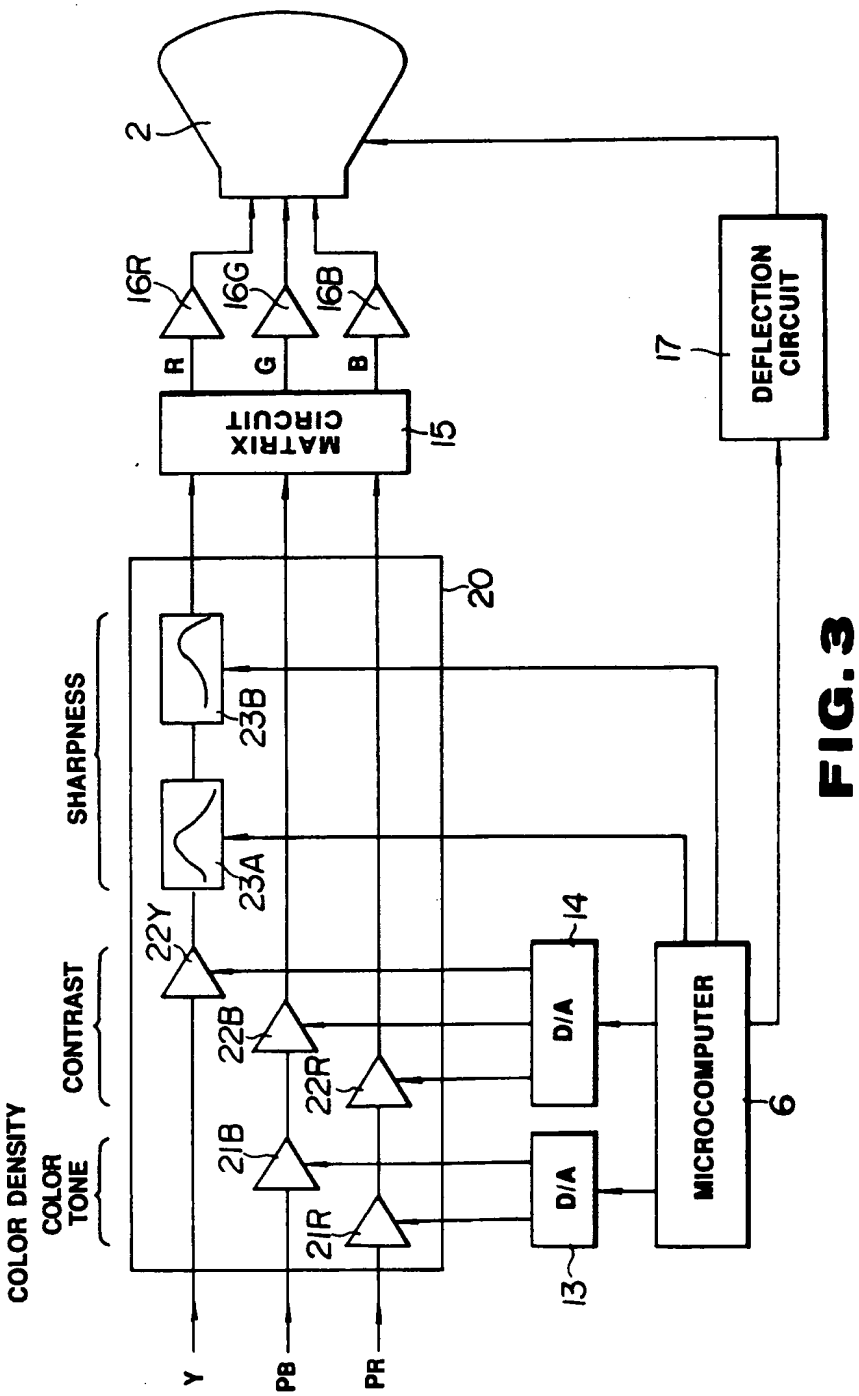

FIG. 3